California Power Authority

Distributed Generation Workshop & Dialogue

Determining Next Steps for CPA, September 18, 2002

-- Summary --

I. Executive Summary

Purpose

- Review CPA's first year activities and lessons learned in facilitating DG
- Hear DG Industry Market Update
- Discuss future role & strategies for the California Power Authority to support DG development

Approximately 70 people attended this workshop on next steps for distributed generation. Attendees primarily represented distributed generation manufacturers and developers of solar, combined heat and power, and fuel cell technology. The workshop unfolded as a wide-ranging, active group discussion about the critical issues facing the success of DG deployment in California. The group worked together to identify sixteen issues for which action is needed. Interestingly, there was no differentiation of technology-specific issues. The group consensus identified five top issues for immediate action; these are listed below.

Policy Issue Resolution

- Encourage the CPA to actively participate in regulatory proceedings at the CPUC to positively effect regulations for the development of distributed generation
- Set aside the 10-year payback requirements now required by the financial control agencies for DG capital investment on State facilities

Regulatory Reforms

- Quantify and reflect in procurement acquisition (and incentive programs) the indirect benefits of DG (e.g., grid benefits of reliability and reduced transmission burdens; air quality benefits from reduced emissions of NOx and CO2 particulates)
- Remove penalties that are inhibiting or precluding DG development (e.g. exit fees, departing load surcharges, stand-by charges, interconnection study fees, gas and electric tariff structure peculiarities, etc.)

Future Projects or Concepts

- Permit DG to qualify as a resource in the Renewable Portfolio Standard (e.g., to do so would need to quantify and "credit" DG indirect benefits; see Regulatory issue, above)

CPA Staff Insights

- Neither the general DG industry, nor its technology segments, has a strong, effective coalition to advocate their interests in the State legislature or at the CPUC.
- The industry is focused on survival; the need for financing, whether supplied by the Power Authority or other entities, did not surface as a priority.

Next Steps

- Reconvene in one month (Oct. 25, 2002) to discuss the "Top 5" issues in detail, and lay out specific courses of action by stakeholders

II. Group-Identified Key Action Steps, and Priorities

After extensive group discussion (see Section III below) the group agreed to identify key action steps needed to advance the deployment of DG technologies. After identifying 15 such potential areas for action the group assigned them priorities. These items and actions discussed are listed below and broken into three categories: Priority action steps, medium importance and least importance.

Priority Action Steps

- Encourage the CPA to actively participate in regulatory proceedings at the CPUC to positively effect regulations for the development of distributed generation
- Set aside the 10-year payback requirements now required by the financial control agencies for DG capital investment on State facilities
- Quantify and reflect in procurement acquisition (and incentive programs) the indirect benefits of DG (e.g., grid benefits of reliability and reduced transmission burdens; air quality benefits from reduced emissions of NOx and CO2 particulates)
- Remove penalties that are inhibiting or precluding DG development (e.g. exit fees, departing load surcharges, stand-by charges, interconnection study fees, gas and electric tariff structure peculiarities, etc.)
- Permit DG to qualify as a resource in the Renewable Portfolio Standard (e.g., to do so would need to quantify and "credit" DG indirect benefits; related to third item above)

Medium Importance Actions

- The State of California needs to develop a uniform energy vision
- Incentives are needed to encourage projects bundling distributed generation and energy efficiency measures, to obtain an overall set of cost-effective end-user investments
- Large scale technology procurement commitments (e.g. by State and others) would promote DG development
- DG needs a clearinghouse for "approved" technologies/manufacturers

Lesser Importance Actions

- Create a standard rate tariff for distributed generation
- Change from a price cap structure to a revenue cap structure to reward utilities for project performance
- Address whether there should be (regulated) utility ownership of distributed generation. Assess how this might advance distributed generation.
- Develop standard DG on-site bundled contracts ("clean kWh") for use by any interested end-user
- Establish a trade association to act as the "Voice of Distributed Generation"
- Clarify nomenclature used among regulatory bodies, the utilities and the industry (e.g. define distributed generation versus on-site generation; with "departing load", is all or only a portion subject to exit fees?)

III. Workshop Discussion

1. Opening Q&A Regarding CPA's Role in Facilitating DG

Q. We understand that CPA will issue bonds for its various programs separately from other state issues, but thought that Wall Street would sell the bonds.
A. CPA will issue the bonds, but the underlying credit comes from the borrowing parties, and will then be marketed by the "Wall Street" investment community.

Q. Are the IDB bonds part of CPA's statutory authority?
A. The IDB funds were allocated to the CPA by the Treasurer's office under the state's tax-exempt private activity bond authorization. The Energy IDBs will be issued by the CPA, but are not part of the CPA's $5 billion revenue bond authorization.

Q. CPA conducted a Request for Bid (RFB) for DG technologies. What are the plans for the results of that process?
A. After conducting the RFB, CPA reviewed the results and determined that an aggregated equipment procurement plan was not an advisable route for the CPA at this time. This conclusion was based on:

- CPA lacks the internal resources to carry out a large statewide marketing effort to line up purchase orders,
- Some of the technologies have paybacks that are not acceptable to financial control agencies, at least for State ownership,
- The prices that came in were generally higher than anticipated, and
- State and local government budgets are under severe stress now, and thus it would be difficult to gain many sales of discretionary capital investments at this time.

Therefore the CPA decided to focus on financing, through a) IDBs (financing the production of clean DG technologies) and b) our public agency energy loan program, PULSE. We recognize that PULSE will not create the bulk procurement volume originally envisioned.

Q. When will PULSE be implemented?
A. The program was announced in July. For the initial financing round, applications are available (and are posted on the website) and are due October 15; an initial issuance is anticipated for early 2003.

Q. For what term will the bonds be issued?
A. The length of financing depends on the project's useful life and payback term.

Q. Some DG is considered "dirty". Will CPA fund those technologies?
A. CPA-funded technologies must meet California Air Resources Board air emissions standards for generating facilities in California, as a minimum qualification.

Q. Will technologies not on PULSE's (or other CPA programs) eligible equipment list, but which meet emissions and other standards, qualify?
A. Yes.

2. General Group Discussion

There was general discussion surrounding what role the CPA might play in further developing State energy and DG policies.

CAETFA (formerly CAESFA) could serve as a model for CPA's tax-exempt financing programs.

There are significant issues involving proposed/approved central power generation plants that are now not being built. DG may play a critical role in shoring up potential gaps.

Customer group input and feedback should be included in discussions on all aspects of DG.

There are some higher value issues where DG could provide benefits, including: improving the robustness of the grid; supporting homeland security and reliability measures; utilizing DG to support micro-grid areas where people can go in emergencies. (This will require considering such issues as grid interconnection, economic viability, robust technologies, and potential local islanding sites.) Where was the DG industry during the recent legislative jockeying to extend net metering? Why were only solar, wind, and biogas included? There needs to be a vision for DG and how to sell it along with collective action.

DG Policy – California Energy Commission (CEC) View

Discussion of Rule 21 work on interconnection.

150 MW of DG have been connected since January '01, with another 400 MW proposed.

How is the CEC addressing the benefits of DG to air emissions and the grid? The CEC recognizes that micro-turbine efficiencies produce less air emissions than most fossil fuel based generation technologies. The CEC has not historically addressed DG's beneficial value to the grid but has started studying the issue in the last year and a half.

3. What are the serious obstacles to DG deployment?

Regulatory

There are many regulatory uncertainties directly impacting the DG industry's economics by limiting the industry's ability to secure financing. DG-related issues included in current proceedings before the California Public Utilities Commission (CPUC) include departing load, exit fees, interconnection charges, standby charges, and distribution wheeling.

A variety of suggestions were made for improving the chances of a positive regulatory outcome for the DG industry. These included: ensuring that DG is addressed at the legislative and CPUC level; getting the agencies to work together (CPUC, CEC, CPA and the legislature); and perhaps establishing a working group to meet with legislators and voice the industry's concerns and make a case for its interests. When the group was asked whether they believe the re-introduction of direct access would drive DG development, there was a strong affirmative response.

Note: Some 10-11 individuals in the room indicated they (individually or collectively) have sponsored comments with the PUC on the departing load proceeding (R.0201011).

Ownership

Customers view DG as something "different". With DG, some of their power requirements will be "in-sourced" and customers are historically used to "out-sourcing" their energy needs to the utilities. On-site generation brings an entirely new set of issues into sites' traditional ways of doing business.

Regarding customer side ownership, there was discussion as to whether the host site or a 3rd party would be better equipped to own and manage the facilities. Customer ownership brings multiple new challenges to customers' existing facilities, management, and operations staff. Sites will have to work with outside parties (design firms, equipment vendors and installers, permitting agencies, etc.) to purchase and install the equipment. In addition, on-going operation and maintenance (O&M) costs and new technology operating procedures are a potential problem. Customers will have to ensure budgets allow for proper maintenance. Many facilities operators are averse to new technologies and may be reluctant to support DG. Finally, off-balance sheet risks are added, including fuel costs, the need for a stable thermal host, equipment performance, etc.

Drawbacks for public agency ownership include: the Joint Legislative Budget Committee's 10-year payback restrictions, precluding most State agencies from installing DG; a lack of tax incentives available to the public sector; and that many jurisdictions are required to conduct an extensive RFB process.

On the other hand, with larger projects, customers (especially bigger, more sophisticated agencies) may be more interested in owning the project themselves. These entities may also be interested in installing technologies still in the pre-commercialization stage. One aspect they may appreciate is the potential for increased energy self-independence and reliability. A significant inhibiting factor is that many agencies do not have on-site power consumption sufficient to utilize 100% of the energy output. Without the ability to wheel the surplus energy, the projects cannot be financed.

Third-party ownership could help expand DG opportunities by removing ownership and O&M responsibility from the site and facilities managers. One attendee noted that a "one-stop shop" where an outside entity does the work and sells the energy output to the site, would probably be a very appealing option for many customers.

Two additional options were also suggested. The first was that some other entity be created to aggregate projects to take advantage of CPA financing. The second was that DG companies provide DG on a service basis, and CPA would own the project.

With regard to utility ownership, in some instances, the utility can own DG technologies but must justify the expense. Also, non-regulated utility subsidiaries can own DG in other utilities' service territories. Opinion on whether utilities should be allowed to own DG was fairly divided. Some participants felt that utility ownership would promote DG development. Others felt that utilities are not interested in owning small generation projects because under rate-based revenues, they look for bigger project investments.

Cooperation of Utilities

What are the utility-related implications of installing DG? How will municipal utilities and the investor-owned utilities relate to DG?

DG is currently not strategically aligned with utilities' interests: they don't earn a rate of return on it; they have to coordinate multiple points of interconnection; and, they have additional entities to work with on the customer side of the meter. Utilities also consider DG something "unnatural" -- on-site generation goes against their traditional supplier/controller role -- and utilities are resistant to changing or dealing with the extra complications. In addition, utilities are not convinced of the potential benefits of DG (reduced demand on the grid, reduced air emissions, improved reliability, etc.) and the benefits have not been quantified. A suggestion was made that perhaps Sacramento could become a saturation point to test a new structure, for instance, installing DG extensively in the SMUD territory and in State buildings.

Interconnection was also cited as a barrier to DG installation. The standards vary widely, as do the charges for the interconnection studies. These variances impact the ability of sites to install and finance their own DG, making the costs prohibitively high for third-party developers as well.

To get a good gas price, a CHP unit has to be > 260kW.

Industry Visibility

There are numerous national and state trade associations focused on individual technologies. There is not yet a coalition that represents the broad needs of DG.

4. What will promote DG?

There was a fairly strong feeling that the driving factors to promote DG are getting the State and third parties to act as strong proponents. Utilities are not willing to change on their own and will need some strong pressure. There needs to be further education of legislators about DG.

An observation was made that utilities need to be made indifferent to DG rather than opposing its deployment. One suggestion included trying to shift incentives more towards the utilities so they would consider implementing DG. Also, the regulatory structure should be reevaluated to change how the rate of return is calculated to include new and evolving technologies (for instance, wireless applications, which may be advantageous to the grid). However, getting utilities to become proponents could be problematic, since as already noted, they are not "early adopters". The long-term impact on the cost structure would also need to be carefully evaluated.

One participant noted that utilities have many existing implicit subsidies and suggested that perhaps availing those subsidies to the DG industry and potential customers as well, will enhance development prospects.

Other suggestions were made to help promote DG development. Several attendees suggested adopting a portfolio approach and grouping similar projects, technologies or vendors together to develop some amount of bulk procurement strategy and/or work together to identify good projects on a larger scale. The use of extended guarantees and warranties also can help.

Another suggestion was to develop a mechanism so that DG can count toward the Renewable Portfolio Standard (RPS), noting that clean DG has additional, less quantifiable benefits, and is not just another commodity. To enhance DG projects' chance of qualifying, maybe DG projects could be counted as "twice as valuable" in the auction (or at least accorded some higher benefit in the point system).

Finally, any DG policy committee, existing or to be formed, needs to address the needs of multiple DG technologies.

IV. CPA Overview (Fact sheets displayed on meeting room walls, but not used)

Premises Guiding the CPA

- Statutory Authority
- Energy Resource Investment Plan
  Demand Side:
  - DG
  - Greening Public Buildings
  - Efficiency
  - Metering
- Revenue Bonds and Project Financing
- CPA – Financially Self-Supporting via fees and other revenue
- Limited Staff Resources

Possible CPA Roles

- Broker
- Owner-Leveraged (CPA has no assets, nor equity)
- Conduit Financer

Possible CPA Functions

- Bulk Procurement-hardware
- Lease Financing
  - Public Agency-tax-exempt
  - Private Users- taxable
- Third-party Financing via DG developers
- Turnkey Clean DG energy sales agreements
- Finance DG equipment manufacturing

Issues for CPA Activities with DG

- Legislative and State Financial Control Agency views
- Staff Resources (Development and Implementation.)
- Marketability of Pooled Financing
- Credit Risks and Support (Guarantees)
- Value Proposition "Premises"

V. Participants at Sept. 18, 2002 DG Next Steps Workshop

Name	Organization
Dan Smith	ACWA
Richard Willits	Akeena Solar & Commercial Solar Electric Power
Michael E. Bowler	Alpha Technologies & JEA, Inc.
Steve Heckeroth	Bekaert ECD Solar Systems
Tony Hynes	Bowman Power Systems
Todd Foley	BP Solar
Ron Friesen	CA Air Resources Board
Tom Baker	CA Construction Authority
Bernadette Del Chiaro	CalPIRG
Dan Jacobson	CalPIRG
Kevin Duggan	Capstone Turbine Corp
David Stanesa	Caterpillar
Scott Tomashefsky	CEC-Comm. Keese's Office
Jan Snarpless	Consultant
Katie McCormack	Consulting in Sustainable Energy-Millennium
James McDonald	Corp Renewable Energy Research
John Galloway	CPUC-Energy Division
Dan Adler	CPUC-Strategic Planning Div.
Doug Grandy	DGS & Gov. Office of Planning & Research
Glenn Connor	DGS-Energy Management
Sean Dockery	Division of State Architect
Cara Applegate	DNR International
John Baginski	DTE
Tim Michel	EGIA (Electric & Gas Industries Assoc.)
Paul Eichenberger	Emergent Energy Group
Stephen Torres	FuelCell Energy
Ray Kosanke	Global Solar
George Touchten	GLT Energy
JP Ross	Greenpeace Clean Energy Now
James Malcolm	Hawthorne Power Systems
Rich Lund	Holt of California
Ralph Goodlet	Hunt Power
Molly Tirpak	ICF
Al Lobato	Ingersoll-Rand
Ed Henderson	Ingersoll-Rand
Paul Fukumoto	Ingersoll-Rand
Bob Spurgin	Inland Empire Utility Agency

Randy Turley	International Power Technology
Malcolm McVickard	JEA, Inc. & Alpha Technologies
Cecilia Aguillon-Marketing Manager	Kyocera Solar
Dave Metcalf- Grid-Tie Sales	Kyocera Solar
Alison Pernell	Local Government Commission
Bob Lucas	Lucas Advocates
Bonnie Lucas	Lucas Advocates
Ben Beaver	Millennium Cell
Dick Good	Noresco
Thomas D. O'Connor	O'Connor Consulting Services
Elizabeth Lowe	Onsite Energy
Clark Shen	Orange County
Tim Treat	Peterson Power Systems Inc.
Dylan Savidge	PG & E
John Schultheis	Power Factors
Janice Lin	Powerlight
Patrick Agnello	PVA
Tracy Saville	Real Energy
Patrick McCarthy	RealEnergy
Fred Sisson	Renewable Energy Concepts Inc.
Keith Rutledge	Renewable Energy Development Institute
Andy Chandler	Salas O'Brian Engineers
Kurt Kammerer	San Diego Regional Energy Office
Manuel Alvarez	SCE
Kevin Payne	SCE
Gary Schoonyan	SCE
Mike Iammarino	SDGE
Peter C. Wong	Siebert, Branford, Shank & Co., LLC
Tim Kreutzen	Siebert, Branford, Shank & Co., LLC
Bud Beebe	SMUD
Jim Skeen	SMUD
Matt Lafferty	SMUD
Vincent Schwent	SMUD
Craig Stevens	Solarbuzz
Dale Lim	TruePricing
Tracy Cordes	UTC Fuel Cells
David Deputy	Valley Energy
Jeff Lohrmann	Valley Energy
Joel Rogers	Vector Resources, Inc.
Robert Redlinger	Viron Energy Services

People who could not attend but want an update	
Howard Wenger	AstroPower
Terry Surles	CEC, PIER Program
Joseph McCabe	CEC, Technology Systems
Greg McFram	Chevron Energy Systems
David Field	Clarus Energy
Ron Pernick	Clean Edge Inc.
Lainie Motamedi	CPUC-Strategic Planning Div.
Panama Bartholomy	Division of State Architect
Doug Hinrichs	DNR International
Kirk Uhler	EGIA (Elec. Gas Industries Assoc.)
Rob Silecchia	Encompass Powerservices
Phil Baldwin	Encompass Powerservices
Keith Davidson- President	Energy Nexus Group
George Collard	G.B.C. Electrical Services
Tony Kon	Hawthorn Power Systems-Energy Projects
Loren Kaye	Kahl Pownall
Sam Logan	Logan Energy
Hebab Quazi	Martech International, Inc.
Woody Clark	OPR
Kari Smith	Powerlight
Joel Bleth	PSI-SolarBee
Mike Magee	San Diego Regional Energy Office
Pat Ervin	TES Energy - www.tesenergy.com
Mike Burke	True Pricing
Stewart Martin	True Pricing
Sandy Walker	TSS Consultants
Elizabeth McCarthy	